

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) An active standby system for a control system, the active standby system comprising:

a first programmable logic controller and a second programmable logic controller, the first programmable logic controller being in an active state, the second programmable logic controller being in a standby state each controller having an operating state;
an IO module;

a network connector, wherein the network connector is a switch for controlling signal communication over the fiber optic network cable to avoid signal collisions and maintain determinism throughout the fiber optic network; and,

a high speed fiber optic network cable for operably connecting the first programmable logic controller, the second programmable logic controller and the IO module, wherein a signal is transmitted over the high speed fiber optic network cable at a rate of at least 100 Mb/s.

Claims 2-9 (Cancelled)

Claim 10 (Currently Amended) A method of providing an active standby control system comprising the steps of:

providing a first programmable logic controller and a second programmable logic controller, each controller having an operating state the first programmable logic controller being in an active state, the second programmable logic controller being in a standby state;

providing an IO module; ~~and,~~

operably connecting the first programmable logic controller, the second programmable logic controller and the IO module through a connector and a fiber optic cable, the operably connected first programmable logic controller, the second programmable logic controller, the IO module, the fiber optic cable and the connector forming a sub-network; wherein data is transferred throughout the sub-network at a rate of at least 100 Mb/s; and,

providing a switch for controlling signal communication over the fiber optic network cable to avoid signal collisions and maintain determinism on the sub-network.

Claims 11-14 (Cancelled)

Claim 15 (Currently Amended) A method of providing an active standby control system comprising the steps of:

a first programmable logic controller and a second programmable logic controller, the first programmable logic controller being in an active state, the second programmable logic controller being in a standby state each controller having an operating state;

providing an IO module;

operably connecting the first programmable logic controller, the second programmable logic controller, the IO module and a network connector with a fiber optic cable and forming a sub-network, wherein the network connector is a switch for controlling signal communication over the fiber optic network cable to avoid signal collisions and maintain determinism throughout the fiber optic network, and wherein data is transferred throughout the sub-network at a rate of at least 100 Mb/s;

controlling signal communication over the fiber optic sub-network₁;

assigning a network identifier to each controller;

placing one the first programmable logic controller in primary mode and the other the second programmable logic controller in secondary mode;
sensing the operating state of each the first programmable logic controller, wherein the network identifier of each the first programmable logic controller is selected in response to the operating state of each respective the first programmable logic controller;

exchanging the network identifiers between the first programmable logic controller and the second programmable logic controllers; and,

transmitting a reverse address resolution protocol (RARP) message.

Claims 16-18 (Cancelled)

Claim 19 (Original) The method of claim 15 wherein the sub-network is an Ethernet network.

Claim 20 (Original) The method of claim 15 wherein the network identifier is an Internet Protocol address.

Claim 21 (Original) The method of claim 15 wherein the network identifier is a Media Access Control address.

Claim 22 (Original) The method of claim 15 wherein the network connector is a hub for controlling signal communication over the fiber optic network.

Claim 23 (Original) The method of claim 15 further comprising a master-slave type application layer protocol to ensure that only one signal is being transmitted at a time.

Claim 24 (Cancelled)